

USG Findings And Baby Weight

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Abstract: Foetal development is a very complicated process. From a tiny mass, it is developed in a foetus. Now in scientific era, we can see this process by Ultrasonography. In USG, it is possible to see foetal growth, development, anomalies etc. in womb. We can also assess the femur length, head circumference, abdominal circumference and estimated weight of foetus. In this study we can see the relation between these USG findings and birth weight of baby.

Keywords: Femur length, Abdominal circumference, Head circumference, Baby weight.

I. INTRODUCTION

Foetal development is a very complicated process. From a tiny mass, it is developed in a foetus. The foetus develops its organ system and grows mainly by cell division in the first trimester and half second trimester of pregnancy. During the first half of the second trimester and in the third trimester, most growth occurs by increase in cell size and weight of foetus increases in a linear manner. Now in scientific era, we can see this process by Ultrasonography. In USG, it is possible to see foetal growth, development, anomalies etc. in womb. We can also assess the femur length, head circumference, abdominal circumference and estimated weight of foetus.

II. MATERIALS AND METHODS

The population for this study constituted of all those pregnant women who came for their check-up/treatment in the OPD Clinic of Department of Prasuti Tantra, Institute of Medical Sciences, Banaras Hindu University during the period April 2015 to January 2016 at their own will.

A sample of 90 pregnant women from the above population, who were diagnosed to have completed their 5th month of their pregnancy, was selected to serve as subjects for the experimental clinical trial. In selecting these patients the following selection criteria were additionally applied.

INCLUSION CRITERIA

Only those women were included to serve as subjects of this study who met the following criteria for inclusion:

- ✓ That all subjects were regularly taking following medicines orally since 4th month of their pregnancy:
 - Iron supplement (100mg. Ferrous Ascorbate 1 OD)
 - Calcium 500 mg. 1 OD
 - Folic Acid 5 mg. 1 OD
- ✓ Uncomplicated cases of pregnancy between 20-22 wks.
- ✓ Both primi and multigravida.
- ✓ Age between 18-40 yrs.
- ✓ Single intrauterine gestation.

EXCLUSION CRITERIA

Those subjects were not selected for this study who reported or were diagnosed with any of the following condition:

- ✓ If there was any history of medical disorders during pregnancy such as: Pulmonary diseases, renal diseases, Psychiatric disorders, Cardiac diseases, Epilepsy etc.
- ✓ If Pregnancy is complicated with jaundice, eclampsia, preeclampsia, twin pregnancy, PIH etc.
- ✓ If Systemic pathology such as: tuberculosis, D.M., HIV, HBsAg etc. is found.

The patients were pre-tested (assessed) at the time of registration on the criterion variables selected for the evaluation in this study. At full term, the patients were post-

tested on the same assessment variables. In this way a pre-test post- test experimental design was adopted to supplicate the experimental trial in this study. Baby weight after delivery is also noted.

CRITERIA

The following objective assessments of each subject were done before and after by USG:

- ✓ Head circumference,
- ✓ Abdominal circumference;
- ✓ Femur length; and
- ✓ Baby weight after delivery.

BASELINE SCREENING

It is important to mention that a baseline screening of all the 90 subjects selected for this study was done on the basis of following clinical tests to ensure that complications related to abnormalities as revealed by them do not contaminate the results of this study:

- ✓ HIV
- ✓ VDRL
- ✓ HBsAg
- ✓ CBC
- ✓ Blood sugar
- ✓ Urine R/M
- ✓ Blood group with Rh factor
- ✓ Blood urea
- ✓ USG

III. OBSERVATIONS AND RESULTS

Distribution of patients as observed is presented so as to present a clear picture of the subjects in the study.

AC. diff. in mm	Patients	
	No.	%
< 120	3	3.33
120-140	23	25.56
140-160	24	26.67
> 160	40	44.44
Total	90	100

Table: Patients according to difference in abdominal circumference (mm.)

Data in Table no.1 shows that 3 (3.33%) patient has <120 mm. difference in abdominal circumference, 23 (25.56%) patients have A.C. difference between 120-140 mm., 24 (26.67%) patients have A.C. difference between 140-160 mm. and 40 (44.44%) patients have >160 mm. A.C. difference.

HC. diff. in mm.	Patients	
	No.	%
< 100	3	3.33
100-120	22	24.44
120-140	26	28.89
> 140	39	43.33
Total	90	100

Table 2: Patients according to difference in head circumference (mm.)

The data in above Table reveals that there is 3 (3.33%) patient who has <100 mm. difference in head circumference, 22 (24.44%) patients have H.C. difference between 100-120 mm., 26 (28.89%) patients have H.C. difference between 120-140 mm. and 39 (43.33%) patients have >140 mm. H.C. difference.

FL. diff. in mm.	Patients	
	No.	%
< 25	3	3.33
25-30	20	22.22
30-35	27	30
> 35	40	44.44
Total	90	100

Table 3: Patients according to difference in femur length (mm.)

It is clear from data in above table that here is 3 (3.33%) patient having <25 mm. difference in femur length, 20 (22.22%) patients have F.L. difference between 25-30 mm., 27 (30%) patients have F.L. difference between 30-35 mm. and 40 (44.44%) patients have >35 mm. F.L. difference.

Baby wt.	Patients	
	No.	%
< 2 kg.	1	1.11
2- 2.5 kg.	19	21.11
2.5-3 kg.	29	32.22
> 3 kg.	41	45.56
total	90	100

Table 4: Patients according to baby weight

There is 1 (1.11%) patient have baby weight <2 kg., 19 (21.11%) patients have baby weight between 2-2.5 kg., 29 (32.22%) patients have baby weight between 2.5-3 kg. and 41 (45.56%) patients have >3 kg. baby weight.

AC difference	Mean baby wt. in grams
<120 mm.	2167.5
120-140 mm.	2557.09
140-160 mm.	2838.02
>160 mm.	3270.15

Table 5: Baby weight in relation to difference in abdominal circumference

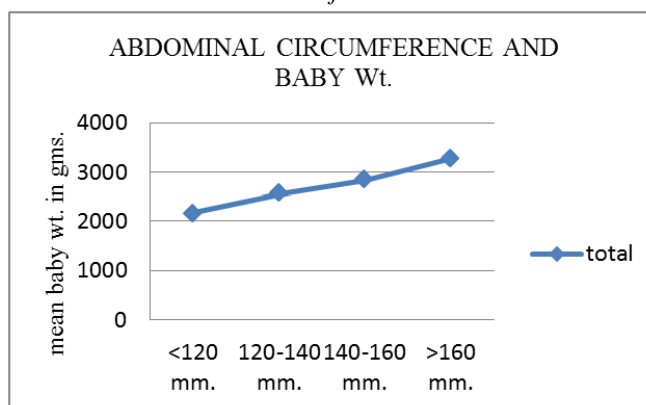


Figure 1

At <120 mm. abdominal circumference difference mean baby weight is 2167.5 gms., when AC difference is between 120-140 mm. mean baby weight is 2557.09 gms. , between 140-160 mm. AC difference mean baby weight is 2838.02

gms. and when the AC difference is >160 mm. mean baby weight is 3270.15 gms.

It shows that, baby weight is increased with abdominal circumference, when difference in abdominal circumference is larger the baby weight is also higher.

HC difference	Mean baby wt. in grams
<100 mm.	2170
100-120 mm.	2671.17
120-140 mm.	2814.79
>140 mm.	3292.05

Table 6: Baby weight in relation to difference in head circumference

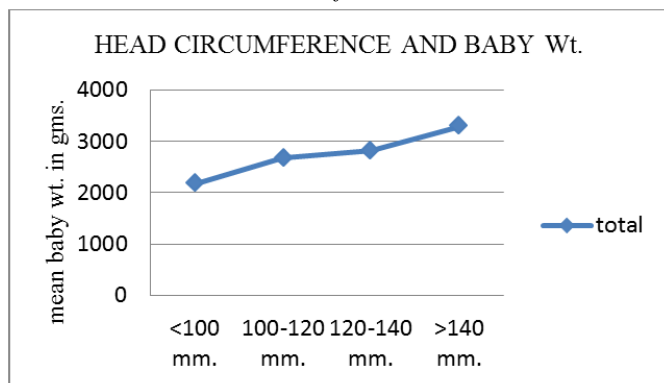


Figure 2

At <100 mm. head circumference difference mean baby weight is 2170 gms., when HC difference is between 100-120 mm. mean baby weight is 2671.17 gms., between 120-140 mm. HC difference mean baby weight is 2814.79 gms. and when the HC difference is >140 mm. mean baby weight is 3292.05 gms.

It shows that baby weight is increased with head circumference, when difference in head circumference is larger the baby weight is also higher.

FL difference	Mean baby wt. in grams
<25 mm.	2180
25-30 mm.	2486.96
30-35 mm.	2838.54

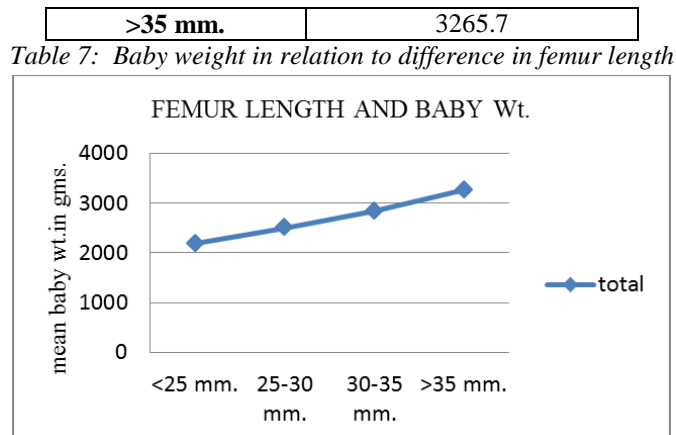


Figure 3

At <25 mm. femur length difference mean baby weight is 2180 gms., when FL difference is between 25-30 mm. mean baby weight is 2486.96 gms., between 30-35 mm. FL difference mean baby weight is 2838.54 gms. and when the FL difference is >35 mm. mean baby weight is 3265.7 gms.

It shows that, baby weight is increased with femur length, when difference in femur length is larger the baby weight is also higher.

IV. CONCLUSION

More gain in femur length, abdominal circumference and head circumference is related to more baby weight.

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